

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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IDENTIFICATION PAGE

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Applicant: HASSAN, AZIZ et al.
Serial No: 10/666,488
Filed: 19 Sept. 2003

Atty. Docket No: BSN9
Examiner: NATHAN M. NUTTER
Group Art Unit: 1711

15

For: NOVEL MULTIFUNCTIONAL POLYMER FOR USE IN HOT MELT ADHESIVE
APPLICATIONS

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Commissioner for Patents

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25

APPEAL BRIEF

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This is an appeal from the final rejection of the Examiner mailed February 17, 2006
rejecting Claims 1, 3-16 and 18-27. This brief is accompanied by the requisite fee set forth in 37
C.F.R. § 1.17(f).

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U.S. Ser. No. 10/666,488
BSN9 AppealBr

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1. **REAL PARTY IN INTEREST**

The real party in interest is HRD Corp, Houston, TX, the sole assignee of this patent application.

2. **RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to the appellant or the appellant's legal representative, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. **STATUS OF CLAIMS**

There are thirty-two (32) Claims in the application.

Claims 1, 16, 28 and 31 are the independent Claims.

The status of the Claims as set out in Office Paper No. 0206 (Office Action mailed 17 February 2006) is as follows:

Claims allowed:	None.
Claims objected to:	None.
Claims rejected:	Claims 1, 3-16, and 18-27.
Claims cancelled:	Claims 2, 17 and 28-30.
Claims withdrawn:	Claims 31-32.
The Claims on Appeal are:	Claims 1,3-16 and 18-27.

4. **STATUS OF AMENDMENTS**

The application was filed on 19 September 2003. There are thirty-two (32) Claims, of which three (3) are independent Claims (Claims 1, 16 and 31).

A final rejection was issued in Office Paper 0206 (mailed 17 Feb. 2006). An Amendment After Final was filed on 17 August 2006. A Notice of Appeal was filed on 17 August

2006. An Advisory Action (Office Paper 20060824) was mailed on 29 Aug. 2006 in response to the Amendment After Final.

The Advisory Action stated that the amendment would not be entered
Therefore, based on the final rejection, the status of the claims is:

5	Claims allowed:	None.
	Claims objected to:	None.
	Claims rejected:	Claims 1, 3-16, and 18-27.
	Claims withdrawn:	Claims 31-32
	Claims cancelled:	Claims 2, 17 and 28-30.

10

The Claims on Appeal are: Claims 1, 3-16 and 18-27.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Two (2) of the independent Claims are involved in this appeal, Claims 1 and 16. Claim 28 was previously cancelled, and Claim 31 was withdrawn for reasons specified in Office Paper 0206 (Page 2, Restriction/Election). Pursuant to 37 CFR 41.37(c)(1)(v), all references to the specification refer to the specification filed 19 September 2003.

As described in the specification, embodiments of the invention include an ethylene/alpha-olefin interpolymer composition that can be utilized in hot melt adhesive compositions. The hot melt adhesive compositions can be applied to cellulosic materials, such as corrugated cardboard, kraft paper, paper and the like.

The specification describes the manner of synthesis of the ethylene/alpha-olefin inter polymers using a multiple catalyst system that produces polymers having either a high or a low molecular weight. A series of hot melt adhesive compositions were developed using several of the ethylene/alpha-olefin interpolymers, and the hot melt adhesive compositions were characterized for their adhesive properties using a number of tests, as will be described below.

Claim 1

Claim 1 describes a hot melt adhesive composition that consists essentially of a homogeneous ethylene/alpha-olefin interpolymer and a tackifier. Claim 1 includes a description of some of the properties of the inventive ethylene/alpha-olefin interpolymers. But unlike traditional hot melt adhesives which comprise a polymer, a tackifier and a wax (p. 2, lines 21-24), the inventive ethylene/alpha-olefin interpolymers can function as both the wax and polymer components of the hot melt adhesive (p. 5, lines 5-8 and lines 21-28).

In a hot melt adhesive composition, the polymer component provides the strength to the adhesive bond (p. 2, line 25). The tackifier provides tack to the adhesive by improving wetting, which serves to secure the items to be bonded while the adhesive sets, and reduces the viscosity of the system making the adhesive easier to apply to the substrate (p. 2, lines 25-28). The wax shortens the open time and also reduces the viscosity of the system (p. 2, lines 28-29). The open time of an adhesive refers to the time it takes to solidify to a point where it can no longer bond with the intended article, and is considered to be an important characteristic of any adhesive (p. 2, lines 14-16).

Unlike ethylene/alpha-olefin interpolymers described in prior art references, the ethylene/alpha-olefin interpolymers of the present invention are synthesized using a multiple catalyst system described in Example 5 (commencing of p. 47 through p. 50, and particularly in the footnotes to Tables 2 (page 39) and 5 (page 43), and page 48, lines 3-17 of the specification).

5 The compositions of the pending claims differ from those of the references because of the novel manner in which the ethylene/alpha-olefin interpolymers were produced, using catalysts that produce polymers with either a high or a low molecular weight. Example 5 of the specification, commencing on page 47 through page 50, and particularly in the footnotes to Tables 2 (page 39, referring to use of multiple catalysts) and 9 (page 49), describe the use of these
10 different catalysts to synthesize the ethylene/alpha-olefin interpolymers.

 The data in Tables 2, 3 and 10 (pages 39-40 and 50 of the specification) demonstrate that a variety of different ethylene/alpha-olefin interpolymers were produced using this methodology, and when selected ethylene/alpha-olefin interpolymers were then incorporated into
15 a hot melt adhesive formulation with either a single tackifier (Tables 4-5, p. 42-43) or a mixture of tackifiers (Table 6, p. 44), several groups could be observed.

 The differences among the groups of ethylene/alpha-olefin interpolymers include those in which the alpha-olefin is 1-octene (Tables 4, 6, 10 and 11, on pages 42, 43, 50 and 52, respectively), and those in which the alpha-olefin is propylene (Table 3, p. 43 of the specification).
20

 The hot melt adhesive composition in Claim 1 consists essentially of from about 40 to about 100 percent by weight of the homogeneous ethylene/alpha-olefin interpolymers, and from about 0 to about 40 percent by weight of one or more tackifiers. The types of tackifiers that can
25 be employed in embodiments of the invention are listed in the specification at p.28, line 9 through p. 30, line 15, and more particularly in Examples 2 and 3 (p. 41, lines 1-19, and Tables 4-7, using Escorez 5637 as the tackifier in the hot melt adhesive formulations of Table 4-5, and a mixed tackifier combination used for the hot melt adhesive formulations in Table 6). The tackifier Escorez 5637 is commercially available, and is an aromatic cycloaliphatic hydrocarbon tackifier resin with
30 a softening point of 127 degrees C to 133 degrees C (Table 1, p. 16).

 Properties of the various ethylene/alpha-olefin interpolymers, and the hot melt adhesive formulations developed using the ethylene/alpha-olefin interpolymers of the present invention were evaluated using several tests.
35

The viscosity of the inventive ethylene/alpha-olefin interpolymers and the various hot melt adhesive compositions that were developed using these ethylene/alpha-olefin interpolymers, was determined using a Brookfield Laboratories Viscometer, at a temperature of either 300 degrees F. or 350 degrees F (p. 34, lines 5 - 23 of the specification).

5 The adhesive properties of the hot melt adhesive compositions using the ethylene/alpha-olefin interpolymers of the present invention were evaluated using the Shear Adhesion Failure Temperature Test ("SAFT"), Peel Adhesion Failure Temperature Test ("PAFT") and the percent fiber tear test (see specification at p. 34, line24-p. 35, line 25).

10 The Shear Adhesion Failure Temperature Test (p. 34, lines 24-30) determines the temperature at which an adhesive fails, in which a sample of adhesive is applied to a substrate, a standard weight is attached to the substrate, and the temperature increased at a specific increment until the adhesive fails, as shown by separation of the substrate.

15 The Peel Adhesion Failure Test (p. 35, lines 2-5) is somewhat similar to the SAFT, but measures the adhesion of the adhesive when the substrate is peeled at a particular angle, in this text, an angle of 180 degrees.

20 The percent fiber tear test is conducted on a standard paper, in which a known quantity of adhesive is placed between two sheets of the paper, allowed to dry, and the sheets are manually pulled apart rapidly, and the amount of fiber tear is estimated. As stated in the specification (p. 35, lines 22-25) testing was done using 45 pound basis weight kraft paper, the type that is typically used in the manufacture of cardboard boxes.

25 The density of the ethylene/alpha-olefin interpolymers was measured using ASTM D-792, and the samples annealed at ambient conditions for 24 hours prior to taking the density measurement (p. 10, lines 19-20).

30 The molecular weights of the ethylene/alpha-olefin interpolymers, determined as both the weight average molecular weight (M_w) and the number average molecular weight (M_n) and the were determined by gel permeation chromatography (p. 9, lines 6-23). The ratio of the weight average molecular weight (M_w) to the number average molecular weight (M_n), defined by M_w/M_n , is also used to characterize the molecular weight distribution of the interpolymers (p. 12, lines 21-25).

Consequently, the characteristics of the ethylene/alpha-olefin interpolymer serve to identify the type of hot melt adhesive produced, and thus used in the claims

Claim 1 is recited below:

1. A hot melt adhesive composition consisting essentially of:

A) from about 40 to 100 percent by weight (based on the final weight of the hot melt adhesive composition) of a homogeneous ethylene/a-olefin interpolymer wherein:

1) the homogeneous ethylene/a-olefin interpolymer is present in an amount of from about 60 to about 85 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/a-olefin interpolymer is characterized by having::

i) a density of from about 0.880 to about 0.930 g/cm³;

ii) a number average molecular weight (Mn) of from about 1,000 to about 9,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 500 to about 7,000 cP and

2) the hot melt adhesive composition is characterized by having:

i) a Brookfield Viscosity (measured at 350°F) of from about 400 to about 2,000 cP;

ii) a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 110°F; and

iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 140°F; and

B) from about 0 to about 60 percent by weight (based on the final weight of the hot melt adhesive composition) of one or more tackifiers.

Claim 16

Independent Claim 16 describes a cellulosic article which is formed using a hot melt adhesive composition (p. 6, lines 1-7). The adhesive properties of the various hot melt adhesive formulations developed using the ethylene/alpha-olefin interpolymers of the present invention were evaluated using several tests. These tests include the Shear Adhesion Failure Temperature Test ("SAFT"), Peel Adhesion Failure Temperature Test ("PAFT") and the percent fiber tear test (see specification at p. 34, line 24-p. 35, line 25).

The Shear Adhesion Failure Temperature Test (p. 34, lines 24-30) determines the temperature at which an adhesive fails, in which a sample of adhesive is applied to a substrate, a standard weight is attached to the substrate, and the temperature increased at a specific increment until the adhesive fails, as shown by separation of the substrate.

5 The Peel Adhesion Failure Test (p. 35, lines 2-5) is somewhat similar to the SAFT, but measures the adhesion of the adhesive when the substrate is peeled at a particular angle, in this text, an angle of 180 degrees.

10 The percent fiber tear test is conducted on a standard paper, in which a known quantity of adhesive is placed between two sheets of the paper, allowed to dry, and the sheets are manually pulled apart rapidly, and the amount of fiber tear is estimated. As stated in the specification (p. 35, lines 22-25) testing was done using 45 pound basis weight kraft paper, the type that is typically used in the manufacture of cardboard boxes, which are cellulosic articles as described in claim 16 and its dependent claims. Claims 26 and 27 further describe the various types of cellulosic
15 products to which the inventive hot melt adhesive compositions can be applied, and these include products such as corrugated cardboard, kraft paper, linerboard and paper, such as were evaluated using the SAFT, PAFT, and percent fiber tear tests described above.

20 The other parameters used to characterize either the ethylene/alpha-olefin interpolymers of the present invention, or the hot melt adhesive compositions produced using them, were described in the section above relating to Claim 1, and are incorporated herein so as not to be repetitious.

25 Claim 16 is recited below.

16. A cellulosic article formed using a hot melt adhesive composition, the adhesive composition consisting essentially of;

 A) from about 40 to 100 percent by weight (based on the final weight of the hot melt adhesive composition) of a homogeneous / α -olefin interpolpolymer

30 wherein in the hot melt adhesive composition;

 1) the homogeneous ethylene/alpha-olefin interpolpolymer is present in an amount of from about 60 to about 85 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/alpha-olefin interpolpolymer is characterized by having:

 I) a density of from about 0.880 to about 0.930 g/cm³;

35 ii) a number average molecular weight (Mn) of from about 1,000 to about

9,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 500 to about 7,000 cP and wherein

2) the hot melt adhesive composition is characterized by having:

i) a Brookfield Viscosity (measured at 350°F) of from about 400 to about 2,000 cp

ii) a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 110°F; and

iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 140°F, and

B) from about 0 to about 60 percent by weight (based on the final weight of the hot melt adhesive composition) of one or more tackifiers.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3-16 and 18-27 stand rejected under judicially created doctrine of obviousness-type double patenting, as being unpatentable over two individual references, the Yalvac et al. patent (U.S. Pat. No. 6,552,110, “the ‘110 reference”, or “Yalvac et al.”) ,and the Werenicz et al. Patent (U.S. Pat. No. 6,120,867 (“the ‘867 reference” or “Werenicz et al.”).

Claims 1, 3-16 and 18-27 stand rejected under 35 U.S.C. §102(e) , as being unpatentable over two individual references, the Yalvac et al. patent (U.S. Pat. No. 6,552,110, “the ‘110 reference”, or “Yalvac et al.”) ,and the Werenicz et al. Patent (U.S. Pat. No. 6,120,887 (“the ‘887 reference” or “Werenicz et al.”).

The rejections of these Claims could be grouped as follows:

Whether Claims 1 and 3-15 are unpatentable under the doctrine of obviousness-type double patenting, as being unpatentable based on Yalvac et al. (U.S. Pat. No. 6,552,110).

Whether Claims 1, 3-16 and 18-27 are unpatentable under the doctrine of obviousness-type double patenting, as being unpatentable 35 U.S.C. §103(a), as being obvious based on Werenicz et al. (U.S. Pat. No. 6,120,887).

Whether Claims 1 and 3-15 are unpatentable under 35 U.S.C. §102(e), as being anticipated by Yalvac et al. (U.S. Pat. No. 6,552,110).

Whether Claims 1, 3-16 and 18-27 are unpatentable under 35 U.S.C. §102(e), as being anticipated by Werenicz et al. (U.S. Pat. No. 6,120,887).

7. ARGUMENT

Introductory Comments

For purposes of this Appeal Brief, there will be separate arguments for the patentability of independent Claim 1 and independent Claim 16.

As indicated by the various headings, the patentability of several dependent claims will be argued separately; otherwise the patentability of the dependent claims will depend upon the outcome of the argument for their respective independent claim.

A. Whether Claims 1 and 3-15 are unpatentable under the doctrine of obviousness-type double patenting, as being unpatentable based on Yalvac et al. (U.S. Pat. No. 6,552,110).

1) Sole Assignment/Ownership of this Application By HRD Corp. Mandates that Rejections Under Doctrine of Obviousness-Type Double Patenting Are Improper

Claims 1 and 3-15 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of the Yalvac et al. reference (U.S. Pat. Nos. 6,552,110 B1).

The Examiner stated that although the conflicting claims are not identical, they are not patentably distinct from each other because the compositions are identical in scope and compositional limitations, possessing identical physical characteristics. (Office Paper 0206, page 3).

The Examiner indicated in Office Paper No. 0205 (page 2) and in Office Paper 0206 (page 3). that a timely filed terminal disclaimer could be used to overcome a rejection based on a nonstatutory double patenting ground, provided the conflicting application or patent is shown to be commonly owned with this application. 37 C.F.R. § 1.130(b).

As Applicants stated in the amendment after final, this assumption that the present pending application is owned by the same entity (Dow Chemical Company, "Dow") that owns the Yalvac et al. and Werenicz et al. patents (Office Paper 0206, page 4, referring to the two references as having a common assignee with the present pending application) is erroneous.

5 The Yalvac et al. patent is assigned to both Dow Global Technologies, Inc., Midland, MI and to Nor-Skilt, Moss, Norway (see Exhibits A & B in Evidence Appendix, for the cover page of U.S. Pat. No. 6,552,110 B1 and the "Patent Assignment Abstract of Title" for U.S. Pat. No. 6,552,110 B1, respectively). The correct ownership of the Yalvac et al. patent could have been readily checked and verified prior to the reference having been cited as being commonly assigned as the present application.

10 Embodiments of the present invention were developed pursuant to a Joint Development Agreement ("JDA") between HRD Corporation ("HRD"), the sole assignee of the present pending application, and Dow. A copy of the JDA is not included in order to protect the confidential information that it contains.

15 Applicants' present pending application was filed on 19 September 2003. The filing of the present pending application was coordinated with Dow, which also filed a patent application on that same date. Dr. Teresa Karjala, an employee of Dow Chemical Co., is a common inventor on both the present pending application and the Dow application, a provisional application for U.S. patent, serial no 60/504,412 ("the '412 provisional"). Dr. Karjala has assigned her rights in both applications to Dow. Dow has assigned its' rights in the present pending application to HRD.

20 A copy of the "Patent Assignment Abstract of Title" for the present pending application, downloaded from the U.S.P.T.O.'s "Assignments on the Web" database, attached hereto as Exhibit C in the Evidence Appendix, is summarized below for the Board's convenience.

25 Sep. 19, 2003: The present pending application was filed.

The "Patent Assignment Abstract of Title" indicates that on:

Feb. 11, 2004: Teresa Karjala assigned her interest in the present pending application to Dow; this assignment was recorded on reel/frame 015511/0071 on June 28, 2004.

30 May 13, 2004: Dow assigned its interest in the present pending application to HRD; this assignment was recorded on reel/frame 015385/0548 on June 1, 2004.

In May 2004 Aziz Hassan and Gregory Borsinger assigned their interest in the present pending application to HRD; this assignment was recorded on reel/frame 015385/0574 on June 1, 2004.

35 Thus, HRD is the sole assignee of the present pending application.

Accordingly, no terminal disclaimer was filed because the filing of such terminal disclaimer in response to the obviousness-type double patenting rejections would have been inappropriate under the circumstances of this case (see Applicants' amendment filed 7 Dec. 2005, p. 16). Furthermore, Applicants do not concede that the present pending claims are obvious in view of the references cited to support the nonstatutory obviousness rejection.

Even assuming that Applicants were to have filed a terminal disclaimer as an expedient to resolve the nonstatutory double patenting issue, such an action is irreversible and could not be corrected later even if it had been filed in error. It is not possible to correct a terminal disclaimer because the Patent Office considers it to be a part of the actual patent grant pursuant to 35 U.S.C. §253. In Bayer AG v. Carlsbad Technology Inc., 64 USPQ2d 1045, 1048 (F. Cir. 2002, effect of Uruguay Round Agreement Act on extension of patent term beyond date set in a terminal disclaimer filed prior to effective date of Uruguay Round Agreement Act) the Federal Circuit indicated that

The PTO explained that the rules of practice did not provide for the withdrawal of a terminal disclaimer. *Decision at 3.* Section 253, which permits filing of a terminal disclaimer and "dedication to the public" of the terminal part of the term, does not include a mechanism for withdrawal or amendment of a terminal disclaimer. 35 U.S.C. §253. Under 35 U.S.C. §253, the PTO considers the terminal disclaimer part of the original patent. The PTO also noted that the clarification of the disclaimed date was not the correction of a clerical or typographical mistake under 35 U.S.C. §255 and 37 C.F.R. § 1,323. [Citation omitted].

Therefore, it would have been pointless to file such a terminal disclaimer.

2) Compositions of the Present Invention Are Not Obvious Under 35 U.S.C. § 103(a)

Even assuming that an obviousness rejection were proper, Applicants maintain that the present pending claims are not obvious with respect to the Yalvac et al. reference.

To reject a claimed invention based upon its obviousness over the prior art, the examiner must support such a rejection by establishing the invention's prima facie obviousness. The examiner must show where in the art cited there is a description of the claimed invention sufficient to have taught or suggested the invention to ordinarily skilled artisans of the time (see, e.g., ACS Hospital Systems, Inc., v. Montefiore Hospital, 221 USPQ 929, 933 (F. Cir. 1984); see also, In re Fine, 5 USPQ2d 1596 (F. Cir. 1988)).

Evaluation of whether the cited documents provide the necessary description requires consideration of "(1) whether the prior art would have suggested to those of ordinary skill in the art they should make the claimed [invention] ... and (2) whether the prior art would have also revealed that in so making ... those of ordinary skill would have a reasonable expectation of success" (In re Vaeck, 20 USPQ2d 1438, 1442 (F.Cir. 1991)). "Both the suggestion and the reasonable expectation of success must be found in the prior art, not in the applicant's disclosure" (In re Vaeck, supra). That is, "one cannot use hindsight reconstruction to pick and choose amongst isolated disclosures in the prior art to deprecate the claimed invention" (In re Fine, supra at 1600).

Each claim limitation must be taught, either explicitly or implicitly by the teachings of the reference. Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. and Inter. 1985). "The examiner must make a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 U.S.P.Q. at 973.

Regarding the nature of an obviousness question, in In re Kotzab, 55 USPQ2d, 1313, 1317 (Fed. Cir. 2000) the Federal Circuit stated

The motivation, teaching or suggestion may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ 2d at 1617. The motivation, teaching or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. See WMS Gaming Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed. Cir. 1999). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA, 1981) (and cases cited therein).

The MPEP §2142 further states that "When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper, Ex parte Skinner, 2 U.S.P.Q.2d 1788 (Bd. Pat. App. and Inter. 1986).

In In re Vogel and Vogel 164 USPQ 619 (C.C.P.A., 1970) the C.C.P.A. stated that as part of a determination of obviousness, "does any claim in the application define merely an obvious variant of the invention disclosed and claimed in the patent?" (In re Vogel, 164 USPQ at 622).

But the Federal Circuit noted that this also includes an analysis of what is in the specification, to determine what the claim defines.

It is important to bear in mind in that comparison can be made only with what invention is claimed in the earlier patent, paying careful attention to the rules of claim construction to determine what a invention a claim *defines* and not looking to the claim for anything that happens to be mentioned in it is as though it were a prior art reference.

General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 USPQ2d 1839, 1845 (F. Cir. 1992).

The Federal Circuit further elaborated that the patent disclosure can be used in determining the means of the claims in view of the disclosed embodiment.

We recognize that it is most difficult, if not meaningless, to try to say what is or is not an obvious variant of a claim. A claim is a group of words defining only the boundary of the patent monopoly. It may not describe any physical thing and indeed may encompass physical things not yet dreamed of. How can it be obvious or not obvious to modify a legal boundary? The disclosure, however, sets forth at least one tangible embodiment within the claim, and it is less difficult and more meaningful to judge whether that thing has been modified in an obvious manner. It must be noted that this use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the reference under 35 U.S.C. 103, since only the disclosure of the invention claimed in the patent may be examined. In re Vogel 164 USPQ at 622.

Applicant reiterates the legal reasoning of the previous sections of the Argument. The Board has stated "The examiner must make a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 U.S.P.Q. at 973.

Following these rules for claim construction, and using the disclosure to clarify the present pending claims, it is clear that the compositions of the pending claims are different from those of the references. Although there may be some similarities in density and molecular weight, the inventive ethylene/alpha-olefin interpolymers are still different from those described in the reference because of the novel manner in which these ethylene/alpha-olefin interpolymers were produced, using multiple catalysts that produce polymers with either a high or a low molecular weight, in contrast to the polymers described in the reference. Example 5 of the present pending application, commencing on page 47 through page 50, and particularly in the footnotes to Table 2 (page 39) and Table 9 (page 49, notes a - d), and page 48, lines 3-17, describe the use of these different

catalysts to synthesize the ethylene/ α -olefin interpolymers. There is thus no motivation in the reference to produce ethylene/ α -olefin interpolymers by such a process, let alone to use such novel ethylene/ α -olefin interpolymers in a hot melt adhesive composition.

Applicants respectfully submit that the claims of the present pending application would not have been obvious in view of the teachings of the Yalvac et al. reference, and that the Board must reverse the rejection of Claims 1 and 3-15.

B. Whether Claims 1, 3-16 and 18-27 are unpatentable under the doctrine of obviousness-type double patenting, as being unpatentable based on Werenicz et al. (U.S. Pat. No. 6,120,887)..

1) Sole Assignment/Ownership of this Application By HRD Corp. Mandates that Rejections Under Doctrine of Obviousness-Type Double Patenting Are Improper

Claims 1, 3-16 and 18-27 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of the Werenicz et al. reference (U.S. Pat. No. 6,120,867).

The Examiner stated that although the conflicting claims are not identical, they are not patentably distinct from each other because the compositions are identical in scope and compositional limitations, possessing identical physical characteristics. (Office Paper 0206, page 3).

The Examiner indicated in Office Paper No. 0205 (page 2) and in Office Paper 0206 (page 3). that a timely filed terminal disclaimer could be used to overcome a rejection based on a nonstatutory double patenting ground, provided the conflicting application or patent is shown to be commonly owned with this application. 37 C.F.R. § 1.130(b).

Applicants hereby reiterate the Arguments and legal reasoning set forth in Section A, above regarding HRD being the sole assignee of this patent application. The Werenicz et al. patent is assigned to H.B. Fuller Licensing and Financing, Inc, St. Paul, MN (See Exhibits D & E, Evidence Appendix, cover page of U.S. Pat. No. 6,120,887, and "Patent Assignment Abstract of Title for U.S. Pat. No. 6,120,887, respectively).

Applicants also repeat the argument made above regarding why the filing of a terminal

disclaimer would have been an inappropriate response under the factual circumstances of this case.

Therefore an obviousness-type double patenting rejection of Claims 1, 3-16 and 18-27 is improper, because HRD is the sole assignee of this application, and accordingly, the Board must reverse the rejection of these Claims, and find that they define patentable subject matter.

2) Compositions of the Present Invention Are Not Obvious Under 35 U.S.C. §103(a)

Claims 1, 3-16 and 18-27 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of the Werenicz et al. reference (U.S. Pat. No. 6,120,867).

The Examiner indicated in Office Paper No. 0205 (page 2) and in Office Paper 0206 (page 3). that a timely filed terminal disclaimer could be used to overcome a rejection based on a nonstatutory double patenting ground, provided the conflicting application or patent is shown to be commonly owned with this application. 37 C.F.R. § 1.130(b).

Even assuming that an obviousness rejection were proper, Applicants maintain that the present pending claims are not obvious with respect to the Werenicz et al. reference.

Applicant reiterates the legal reasoning of the previous section (Part A2)) of the Argument regarding why an obviousness rejection is improper. The Board has stated "The examiner must make a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 U.S.P.Q. at 973. For the reasons to be described below, Applicants can only conclude that the reason for the rejection of these claims was purely speculative, in view of the Board's opinion in Ex parte Clapp.

a) Claim 1

Although Werenicz et al. may disclose a density and molecular weight range for the polymers employed in its various compositions, these polymers were produced under conditions different from those employed in the present invention

The compositions of the pending claims differ from those of the references because of the

novel manner in which the ethylene/alpha-olefin interpolymers were produced, using catalysts that produce polymers with either a high or a low molecular weight, as described in the specification.

Example 5 of the present pending application, commencing on page 47 through page 50, and particularly in the footnotes to Table 2 (page 39) and Table 9 (p. 49, notes a-d), and page 48, lines 3-17, describe the use of these different catalysts to synthesize the ethylene/alpha-olefin interpolymers.

Thus, there is no motivation in the references to use ethylene/alpha-olefin interpolymers produced by such a process in a hot melt adhesive composition.

Therefore, Applicants respectfully submit that the claims of the present pending application would not have been obvious in view of the teachings of the Werenicz et al. reference, and accordingly, Claim 1 therefore defines patentable subject matter, and the Board must reverse the rejection of this Claim.

b) Claim 16

Applicant reiterates the legal principles recited in the previous sections of this Argument as applied to Claim 1 above. Claim 16 describes using the inventive compositions with cellulosic articles, which have been defined in the specification (p. 1, line 23 - p. 2, line 7) as materials such as corrugated cartons, boxes, paper bags, labels and tapes.

The title of the reference describes "Disposable Articles Having a Continuous Thermoplastic Coating Comprising A Metallocene Polyolefin". A listing of substrates to which the reference's composition could be applied is found at col. 4, lines 37-42:

In the preferred embodiment, Substrate 2 may be any substrate present in a hygienic article, such as an absorbent, elastomeric strands or webs, tissue, films, coverstock materials such as nonwoven or perforated polyethylene, as well as any material that is not necessarily in the form of a web such as superabsorbent polymer.

The reference provides a listing of substrates to which the reference's composition could be applied, and, viewed on the whole by one of ordinary skill in the art, the emphasis of the reference relates "to a textile material and hygienic disposable articles comprising a bodily fluid impermeable barrier layer (Abstract). The section starting at col. 5, lines 48 - col. 6, line 2, also indicates an emphasis on a hygienic article.

The main substrate used in the reference is a polypropylene nonwoven material (col. 20, lines 63-67) onto which the adhesive composition is applied. This is the substrate used in the

various examples, including the water permeability test (col. 22, lines 38-47) and Tables IV A through IV C (columns 27-28). The reference does mention other possible substrates (col. 4, lines 37-42), but focuses on the polypropylene nonwoven material.

Applicants argue that when the reference is viewed on the whole by one of ordinary skill in the art, the emphasis of the reference relates “to a textile material and hygienic disposable articles comprising a bodily fluid impermeable barrier layer (Abstract). The section starting at col .5, lines 48 - col. 6, line 2, also indicates an emphasis on a hygienic article. A polypropylene substrate is quite distinct from the cellulosic materials onto which Applicants’ claimed composition is being used, and thus, Applicants’ claims would not have been obvious based on the reference. As Applicants have stated in the specification (p. 1, line 23-p. 2, line 7) and shown in the claims, the claimed use for the inventive compositions is primarily as an adhesive, not as a moisture barrier. Although the teachings of the reference may not rise to the level where one could argue that they teach away from the present invention, the reference certainly provides no motivation to use its teachings for an adhesive having characteristics sought for packaging of materials in corrugated cardboard and the like.

Accordingly, the rejection of Claim 16 must be reversed by the Board.

c) Claims 26-27

Applicant reiterates the legal principles recited in the previous sections of this Argument as applied to Claims 1 and 16, Claims 26 and 27 further defines the types of cellulosic articles onto which the inventive compositions can be applied, for example, corrugated cardboard, kraft paper, linerboard and paper.

Applicants argue that when the reference is viewed on the whole by one of ordinary skill in the art, the emphasis of the reference relates “to a textile material and hygienic disposable articles comprising a bodily fluid impermeable barrier layer (Abstract). The section starting at col .5, lines 48 - col. 6, line 2, also indicates an emphasis on a hygienic article. A polypropylene substrate is quite distinct from the cellulosic materials onto which Applicants’ claimed composition is being used, and thus, Applicants’ claims would not have been obvious based on the reference. As Applicants have stated in the specification (p. 1, line 23-p. 2, line 7) and shown in the claims, the claimed use for the inventive compositions is primarily as an adhesive, not as a moisture barrier. Although the teachings of the reference may not rise to the level where one could argue that they teach away from the present invention, the reference certainly provides no motivation to use its

teachings for an adhesive having characteristics sought for packaging of materials in corrugated cardboard and the like.

Therefore the Board must reverse the rejection of Claims 26 and 27.

5 **C. Whether Claims 1 and 3-15 are unpatentable under 35 U.S.C. §102(e), as being anticipated by Yalvac et al. (U.S. Pat. No. 6,552,110).**

1) Rejection Under 35 U.S.C. §102(e) Is Improper Because There Is No Common Assignee

10 Claims 1 and 3-15 were rejected under 35 U.S.C. §102(e) as being anticipated by Yalvac et al. The Examiner stated that the applied reference has a common assignee as the instant application, and because of its earlier effective filing date, constitutes prior art under 35 U.S.C. §102(e).

15 First, as has been pointed out in Part A of this Argument, the assumption that the applied reference has a common assignee as the instant application is simply wrong. The Yalvac et al. patent is assigned to both Dow Global Technologies, Inc, and to Nor-Skilt.

20 Dow has assigned its interest in the present pending application to HRD. HRD Corporation is the sole assignee of this application, as shown in Exhibit C of the Evidence Appendix. Therefore, any rejection under 35 U.S.C. §102(e) is inappropriate.

2) Rejection Under 35 U.S.C. §102 is Improper Because Yalvac et al. Is Not A Proper Reference

25 The rejection of Claims 1 and 3-15 is improper because the Yalvac et al. reference is not an appropriate reference under 35 U.S.C. §102. In order to be a valid reference under 35 U.S.C. §102, the reference must teach every aspect of the claimed invention either explicitly or impliedly, and any feature not directly taught must be inherently present. MPEP 706.02.

30 The reference does not teach a hot melt adhesive composition, or ethylene/alpha-olefin interpolymers produced using a dual catalyst system as described herein, and more particularly in the footnotes to Table 2 (page 39) and Table 9 (page 49, notes a-d). The footnote in Table 2 relates to the use of $(C_5Me_4SiMe_2N^tBu)Ti(\eta^4-1,3-pentadiene)$ and ammonium borate [methylbis(hydrogenatedtallowalkyl) ammonium tetrakis (pentafluoro phenyl) borate, and a modified

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methyaluminoxanate (MMAO) available from AkzoNobel as MMAO-3A (CAS # 146905-79-10). The U.S. patents describing the synthesis of the former two catalysts were specifically incorporated by reference. The catalysts described in the footnote to Table 9 were also described in the disclosures of U.S. patents which were also incorporated by reference, and in the text of a published PCT application WO 02/092619, which corresponds to U.S. Patent No. 6,825,347 B2.

Embodiments of the claimed invention were developed pursuant to a joint research agreement (referred to previously in Section A of this Argument) that was in effect on or before the date the claimed invention was made, and the claimed invention was made as a result of activities within the scope of the joint research agreement. Therefore, under 35 U.S.C. §103(c), the Yalvac et al. reference does not constitute prior art that would preclude patentability of the pending claims.

Even assuming that the Yalvac et al. reference was appropriate under other sections of 35 U.S.C. §102, Applicant maintains that it would not be a proper reference because of the manner of production of the ethylene/alpha-olefin interpolymers employed in the present pending application.

Only in Table 4 (col. 16, lines 27-48, reproduced below for the convenience of the Board) does the Yalvac et al. reference recite properties of the ethylene/alpha-olefin interpolymers employed in the marking composition. But one cannot extrapolate to any of the interpolymers listed other properties, such as molecular weight, PAFT or SAFT or the like, based only on one parameter; if one compares the density and viscosity of samples D and E, both of which have the same reported density (0.880 g/cc), one cannot drawn any conclusion about their viscosities because different properties are listed, that for polymer D being viscosity while that of comparative polymer E is a melt index. Further, while polymers A and B are described within the reference (col 14, lines, 45-49, and col.15 lines 18-23, respectively), the remaining polymers listed in that table are simply unknown; nowhere does the reference describe them, nor does one know what either of the two comparative polymers are. With only one such example of density and viscosity in the entire reference, and with different parameters reported for two samples of the same density, it is impossible to conclude that all ethylene/alpha-olefin interpolymers of any given density will have the same viscosity and other properties. This is just pure speculation, and not at all supported by data anywhere in the reference. Therefore, because the reference fails to recite all of the parameters of the claimed invention, either explicitly or impliedly, it is an improper reference under 35 U.S.C. §102, and the Board must reverse the rejection of Claims 1 and 3-15.

Table Four (From U.S. Pat. No. 6,552,110 B1)

	Density (g/cm ³)	Melt viscosity at 350°F (177°C)(centipoise) (grams/cm..second)
Polymer A	0.875	4300(43)
Polymer B	0.892	2700(27)
Polymer C (comparative)	0.870	1000*(10)
Polymer D	0.880	5000(50)
Polymer E (comparative)	0.880	1000*(10)
Polymer F	0.890	1000(10)

*The reported values are melt indices (I₂), in units of g/10 minutes, as opposed to melt viscosities.

Applicants will admit that the reference discloses a series of molecular weights for some ethylene/alpha-olefin interpolymers, but the molecular weights are not discussed anywhere else in the reference. The reference focuses on luminance testing (col 15, lines 35-39) and adhesion testing to a concrete surface (col. 15, lines 40-43) to evaluate the compositions. But there is nothing in the reference that would lead one to conclude that because a polymer has a certain degree of adhesion to a concrete surface, and is produced under different conditions from the ethylene/alpha-olefin interpolymers of the present invention, then that polymer would have an identical PAFT or SAFT to the inventive ethylene/alpha-olefin interpolymers, as described and claimed in the present pending claims.

Claims 1 and 3--15 therefore define patentable subject matter, and accordingly, the rejection of Claims 1 and 3-15 based upon the Yalvac et al. reference must be reversed by the Board.

3) The Properties of the Claimed Inventive Compositions are Not Inherent in the Reference

The issue of inherency was raised by the Examiner in Office Paper 0206 (pages 6-7), where it was stated that because the reference recites use of ultra-low molecular weight ethylene/alpha-olefin interpolymers, and recites their molecular weight range, the compositions of the reference are essentially identical to the claimed compositions, and therefore, these identical compositions would have inherent identical characteristics, such as the claimed PAFT, SAFT, and viscosities.

While a patentee may not have to teach the values for each and every inherent characteristic for that characteristic to be present, there does have to be some appreciation or

recognition of the inherent characteristic. But as stated previously in section C2) of this Argument (above), one of ordinary skill in the art would view the circumstances of the Yalvac et al. reference as focusing on the luminosity of the compositions when applied to a road surface, and the adhesion of the composition to concrete, a material commonly used for highway construction. Also as discussed previously in section C2) above, the reference merely mentions the molecular weights of the interpolymers, but there is no appreciation for the meaning of the molecular weights, or why they would have any importance, because they are not used to characterize the compositions of the reference (see, for example, claims 1 and 7-11, which include characteristics such as adhesion and luminosity, but no claim recites a molecular weight).

The Federal Circuit stated that “Inherency is quite immaterial if ... one of ordinary skill in the art would not appreciate or recognize the inherent result” in In re Rijckaert, 28 USPQ2d 1955, 1957 (F.Cir. 1993).

From the context of both the specification and the claims in the Yalvac et al. reference, the inventors did not appreciate or recognize such factors. Neither could one of ordinary skill in the art reading the reference conclude, based solely on the densities and the molecular weights given in that reference, that if one used the reference’s particular polymer “X” having a density of “Y”, then the Applicants ethylene/alpha-olefin interpolymer polymer “1” (Table 3, p. 40) having a density of 0.9073 g/cc, a viscosity of 1,375 cp (at 350 degrees F), a number average molecular weight (M_n) of 3,420, when used in combination with a tackifier different from the one used in the reference, and in a different concentration than that used in the reference, could produce a hot melt adhesive composition having PAFT and SAFT values claimed by Applicants. Given essentially a single sample from which to reach such a conclusion, one must conclude that this rejection is just pure speculation, and not at all supported by data anywhere in the reference.

Therefore, the characteristics of Applicants’ claimed compositions cannot have been inherent in the polymers recited in the reference, and the Board must determine that Claims 1 and 3-15 define patentable subject matter, and reverse the rejection of Claims 1 and 3-15 under the Yalvac et al. reference.

D. Whether Claims 1, 3-16 and 18-27 are unpatentable under 35 U.S.C. §102(e), as being anticipated by Werenicz et al. (U.S. Pat. No. 6,120,887).

1) Rejection Under 35 U.S.C. §102(e) Is Improper Because There Is No Common Assignee

Claims 1, 3-16 and 18-27 were rejected under 35 U.S.C. §102(e) as being anticipated by Werenicz et al.. The Examiner stated that the applied reference has a common assignee as the instant application, and because of its earlier effective filing date, constitutes prior art under 35 U.S.C. §102(e).

5 The Werenicz et al. patent is assigned to H.B. Fuller Licensing and Finance; the Patent Assignment of Title (Exhibit E in Evidence Appendix) shows that any interest Dow had in the Werenicz et al. patent was assigned to H.B. Fuller. Therefore, this reference has no common assignee as the present pending application.

10 Applicants reiterate the statements and case law previously cited in Part C 1) of this Argument regarding HRD Corp. as being the sole owner/assignee of this application, because there is no common assignee, it was improper to reject Claims 1, 3-16 and 18-27 based on 35 U.S.C. §102(e) and the Werenicz et al. patent, and therefore the Board must reverse the rejection of these claims, and determine that they define patentable subject matter.

15 **2) Rejection Under 35 U.S.C. §102 is Improper Because Werenicz et al. Is Not A Proper Reference**

a) Claim 1

20 The rejection of Claims 1, 3-16 and 18-27 is improper because the Werenicz et al. reference is not an appropriate reference under 35 U.S.C. §102. In order to be a valid reference under 35 U.S.C. §102, the reference must teach every aspect of the claimed invention either explicitly or impliedly, and any feature not directly taught must be inherently present. MPEP 706.02.

25 Applicants reiterate the arguments and case law cited in Part C 2) of this Argument with respect to Yalvac et al. patent, as it is also applicable to the Werenicz et al. patent.

30 The Werenicz et al. reference does not teach a hot melt adhesive composition, or ethylene/ α -olefin interpolymers produced using a dual catalyst system as claimed herein.

35 The catalyst combination used to synthesize these ethylene/ α -olefin interpolymers is described in the footnotes to Table 2 (page 39) and Table 9 (page 49, notes a-d). The footnote in Table 2 relates to the use of $(C_5Me_4SiMe_2N^tBu)Ti(\eta^4-1,3\text{-pentadiene})$ and ammonium borate [methylbis(hydrogenatedtallowalkyl) ammonium tetrakis (pentafluoro phenyl) borate, and a modified

methyraluminoxanate (MMAO) available from AkzoNobel as MMAO-3A (CAS # 146905-79-10). The U.S. patents describing the synthesis of the former two catalysts were specifically incorporated by reference. The catalysts described in the footnote to Table 9 were also described in the disclosures of U.S. patents which were also incorporated by reference, and in the text of a published PCT application WO 02/092619, which corresponds to U.S. Patent No. 6,825,347 B2.

Embodiments of the claimed invention were developed pursuant to a joint research agreement that was in effect on or before the date the claimed invention was made, and the claimed invention was made as a result of activities within the scope of the joint research agreement, as stated previously. Therefore, under 35 U.S.C. §103(c), the Werenicz et al. reference does not constitute prior art that would preclude patentability of the pending claims.

Assuming that the Werenicz et al. reference is appropriate under other sections of 35 U.S.C. §102, Applicant maintains that it is an improper references because of the manner of production of the ethylene/alpha-olefin interpolymers employed in the present pending application.

b) Claim 16

Applicant reiterates the legal principles described in the prior section regarding why the Werenicz et al. reference is an inappropriate reference under 35 U.S.C. §102, for it fails to disclose all of the elements of the claimed invention.

The Werenicz et al. reference fails to teach use of cellulosic products as a substrate for adhesives.

The reference provides a listing of substrates to which the reference's composition could be applied, and, viewed on the whole by one of ordinary skill in the art, the emphasis of the reference relates "to a textile material and hygienic disposable articles comprising a bodily fluid impermeable barrier layer" (Abstract). The section starting at col .5, lines 48 - col. 6, line 2, also indicates an emphasis on a hygienic article.

The main substrate used in the reference is a polypropylene nonwoven material (col. 20, lines 63-67) onto which the adhesive composition is applied. This is the substrate used in the various examples, including the water permeability test (col. 22, lines 38-47) and Tables IV A through IV C (columns 27-28). The reference does mention other possible substrates (col. 4, lines 37-42), but focuses on the polypropylene nonwoven material.

When viewed in its' entirety, and the focus on polypropylene substrates, the reference could not be intending to cover cellulosic articles, such as corrugated cardboard, kraft paper, linerboard and paper as claimed by applicant in claim 16.

Therefore, the Board must reverse the rejection of Claim 16 based on the Werenicz et al. reference

c) Claims 26 and 27

Applicant reiterates the legal principles described in the prior section regarding why the Werenicz et al. reference is an inappropriate reference under 35 U.S.C. §102, for it fails to disclose all of the elements of the claimed invention regarding Claim 16.

Given the detailed listing of noncellulosic articles as substrates to which the reference's composition could be applied, and, viewed on the whole by one of ordinary skill in the art, the emphasis of the reference relates "to a textile material and hygienic disposable articles comprising a bodily fluid impermeable barrier layer (Abstract). The section starting at col .5, lines 48 - col. 6, line 2, also indicates an emphasis on a hygienic article. A polypropylene substrate is quite distinct from the cellulosic materials onto which Applicants' claimed composition is being used.

Thus, when viewed in its' entirety, the reference could not be intending to cover cellulosic articles, such as corrugated cardboard, kraft paper, linerboard and paper as claimed by applicant in Claims 26 and 27, and accordingly, the Board must reverse the rejection of Claims 26 and 27 based on the Werenicz et al. reference..

3) The Properties of the Claimed Inventive Compositions are Not Inherent in the Reference

The issue of inherency was raised by the Examiner in Office Paper 0206 (page7), where it was stated that because the reference recites use of ultra-low molecular weight ethylene/alpha-olefin interpolymers, and recites their molecular weight range, the compositions of the reference are essentially identical to the claimed compositions, and therefore, these identical compositions would have inherent identical characteristics, such as the claimed PAFT, SAFT, and viscosities.

Applicant reiterates the arguments and legal principles argued in Section C3) of this Argument as applied to the Yalvac et al. reference, and applies it to the Werenicz et al. reference.

While a patentee may not have to teach the values for each and every inherent

characteristic for that characteristic to be present, there does have to be some appreciation or recognition of the inherent characteristic. But as stated previously in section C2) of this Argument (above), one of ordinary skill in the art would view the circumstances of the Werenicz et al. reference as focusing on materials that are impermeable to fluids, rather than on the composition's adhesive properties.

Th reference does mention the molecular weights of the interpolymers, and the viscosities but this is done in the manner similar to that described above regarding the Yalvac et al. reference, where there is minimal appreciation for the meaning of the molecular weights, or why the viscosities would have any importance. There is no mention of viscosity in any of the claims; and only claim 1 has any reference to molecular weights in referring to the polydispersity ratio of the composition.

Table A in the reference lists properties of the polymers used, and includes density, melt index, and the viscosity for only a single polymer (Table A, cols. 17-18, lines 32-53), but does not correlate, or mention how to correlate, the melt index data and viscosity.

The Federal Circuit stated that "Inherency is quite immaterial if ... one of ordinary skill in the art would not appreciate or recognize the inherent result" in In re Rijckaert, 28 USPQ2d at 1957.

From the context of both the specification and the claims in the Werenicz et al. reference, the inventors did not appreciate or recognize such factors. Neither could one of ordinary skill in the art reading the reference conclude, based solely on the densities and the molecular weights given in that reference, that if one took the reference's particular polymer "X" having a density of "Y", and used it in a hot melt adhesive composition, and took Applicants polymer "1" (Table 3, p. 40) having a density of 0.9073 g/cc, a viscosity of 1,375 cp (at 350 degrees F), a number average molecular weight (M_n) of 3,420, when used in combination with a tackifier different from the one used in the reference, and in a different concentration than that used in the reference, that the different ethylene/alpha-olefin interpolymers would produce identical hot melt adhesive compositions having the PAFT and SAFT values claimed by Applicants. This is just too speculative of a conclusion to reach based upon so little data provided in the reference.

Therefore, the characteristics of Applicants' claimed compositions cannot have been inherent in the polymers recited in the reference, and the Board must determine that Claims 1, 3-16 and 18-27 define patentable subject matter, and reverse the rejection of these Claims under the Werenicz et al. reference.

8. CONCLUSION

Applicant respectfully submits that Claims 1, 3-16, and 18-27 define patentable subject matter, and for the reasons presented above, the Board must reverse the rejections of these Claims, determine that these Claims define patentable subject matter, and allow the present pending Claims.

Respectfully submitted,

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9. CLAIMS APPENDIX

Claims involved in this appeal are:

We claim:

5 1. A hot melt adhesive composition consisting essentially of:

A) from about 40 to 100 percent by weight (based on the final weight of the hot melt adhesive composition) of a homogeneous ethylene/a-olefin interpolymers wherein:

1) the homogeneous ethylene/a-olefin interpolymers is present in an amount of from about 60 to about 85 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/a-olefin interpolymers is characterized by having::

i) a density of from about 0.880 to about 0.930 g/cm³;

10 ii) a number average molecular weight (Mn) of from about 1,000 to about 9,000; and

15 iii) a Brookfield Viscosity (measured at 300°F) of from about 500 to about 7,000 cP and

2) the hot melt adhesive composition is characterized by having:

i) a Brookfield Viscosity (measured at 350°F) of from about 400 to about 2,000 cP;

20 ii) a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 110°F; and

iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 140°F; and

25 B) from about 0 to about 60 percent by weight (based on the final weight of the hot melt adhesive composition) of one or more tackifiers.

2. (Cancelled).

3. The hot melt adhesive composition of Claim 1 wherein;

A) the homogeneous ethylene/ α -olefin interpolymer is present in an amount of from about 65 to about 80 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/ α -olefin interpolymer is characterized by having:

i) a density of from about 0.890 to about 0.920 g/cm³;

ii) a number average molecular weight (Mn) of from about 1,250 to about 7,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,000 to about 6,000 cP; and

B) the one or more tackifiers is present in an amount of from about 20 to about 35 percent by weight (based on the final weight of the hot melt adhesive composition); and where

C) the hot melt adhesive composition is characterized by:

i) having a Brookfield Viscosity (measured at 350°F) of from about 500 to about 1,400 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 115°F;

iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 150°F; and

iv) exhibiting 100% paper tear at 35°F.- 140°F.

4. The hot melt adhesive composition of Claim 1 wherein;

A) the homogeneous ethylene/ α -olefin interpolymer is characterized by having:

i) a density of from about 0.895 to about 0.915 g/cm³;

ii) a number average molecular weight (Mn) of from about 1,500 to about

6,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,500 to about 5,000 cP; and

B) the hot melt adhesive composition is characterized by:

I) having a Brookfield Viscosity (measured at 350°F) of from about 750 to about 1,200 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 120°F;

iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 170°F; and

iv) exhibits 100% paper tear at 0°F.-140°F.

5. The hot melt adhesive composition of Claim 1 wherein;

A) the homogeneous ethylene/a-olefin interpolymer is characterized by having:

I) a density of from about 0.893 to about 0.930 g/cm³;

ii) a number average molecular weight (Mn) of from about 1000 to about

6,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,500 to about 5,000 cP; and

B) the hot melt adhesive composition is characterized by:

I) having a Brookfield Viscosity (measured at 350°F) of from about 400 to about 1,400 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 90°F;

iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 200°F.; and

iv) exhibits 100% paper tear at 140°F.

6. The hot melt adhesive composition of Claim 5 wherein;

A) the homogeneous ethylene/a-olefin interpolmer is characterized by having:

i) a density of from about 0.894 to about 0.910 g/cm³;

ii) a number average molecular weight (Mn) of from about 1100 to about

5,300; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,600 to about

3,200 cP; and

B) the hot melt adhesive composition is characterized by:

i) having a Brookfield Viscosity (measured at 350°F) of from about 700 to about 1,200 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 90°F;

iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 200°F.; and

iv) exhibits 100% paper tear at 140°F.

7. The hot melt adhesive composition of Claim 4 wherein;

A) the homogeneous ethylene/a-olefin interpolmer is an interpolmer of ethylene and one or more C₃-C₃₀ a-olefins; and

B) the one or more tackifiers is selected from the group consisting of aliphatic hydrocarbon resins, hydrogenated hydrocarbon resins, C₅ aliphatic or aromatic hydrocarbon resins or an aromatically modified C₅ aliphatic or aromatic hydrocarbon resins and combinations thereof; and wherein the adhesive composition is capable of binding a fibrous cellulosic article to an article selected from the group consisting of a fibrous cellulosic article, wood, metal, glass, plastic, and combinations thereof.

8. The hot melt adhesive composition of Claim 4 wherein;

A) in the homogeneous ethylene/a-olefin interpolpolymer, the a-olefin[[s]] is selected from the group consisting of C₈ (1-Octene); C₁₀ (1-Decene), C₁₂ (1-dodecene), C₁₄ (1-duodecene), C₁₄ (1-tetradecene), C₁₆ (1-hexadecene), C₁₈ (1-octadecene), C₂₀₋₂₄⁺, C₂₄₋₂₈ and C₃₀ and combinations thereof; and

5 B) the one or more tackifiers is characterized as having an acid number between 0 [[to]] and about 25.8.

9. The hot melt adhesive composition of Claim 5 wherein;

10 A) in the homogeneous ethylene/a-olefin interpolpolymer, the a-olefin[[s]] is selected from the group consisting of C₈ (1-Octene); C₁₀ (1-Decene), C₁₂ (1-dodecene), C₁₄ (1-duodecene), C₁₄ (1-tetradecene), C₁₆ (1-hexadecene), C₁₈ (1-octadecene), C₂₀₋₂₄⁺, C₂₄₋₂₈ and C₃₀ and combinations thereof; and

15 B) the one or more tackifiers is characterized as having an acid number between 0 and about 25.8.

10. The hot melt adhesive composition of Claim 9, further comprising one or more compounds chosen from the group consisting of stabilizers, plasticizers, fillers, antioxidants, preservatives, synergists, dyes, and pigments.

20 11. The hot melt adhesive composition of Claim 8, wherein the α -olefin is selected from the group consisting of 1-octene and propylene.

12. The hot melt adhesive composition of Claim 9, wherein the α -olefin is 1-octene.

25 13. The hot melt adhesive composition of Claim 8, wherein the copolymer has a molecular weight distribution (Mw /Mn) ranging from about 2.1- about 2.7.

14. The hot melt adhesive composition of Claim 9, wherein the copolymer has a molecular weight distribution (Mw /Mn) ranging from about 2.1- about 16.

15. The hot melt adhesive composition of Claim 8, wherein the tackifier is present in an amount of from about 15 to about 35 percent by weight (based on the final weight of the hot melt adhesive composition).

16. A cellulosic article formed using a hot melt adhesive composition, the adhesive composition consisting essentially of;

A) from about 40 to 100 percent by weight (based on the final weight of the hot melt adhesive composition) of a homogeneous α -olefin interpolpolymer

wherein in the hot melt adhesive composition;

1) the homogeneous ethylene/ α -olefin interpolpolymer is present in an amount of from about 60 to about 85 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/ α -olefin interpolpolymer is characterized by having:

i) a density of from about 0.880 to about 0.930 g/cm³;

ii) a number average molecular weight (Mn) of from about 1,000 to about 9,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 500 to about 7,000 cP and wherein

2) the hot melt adhesive composition is characterized by having:

i) a Brookfield Viscosity (measured at 350°F) of from about 400 to about 2,000 cp

ii) a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 110°F; and

iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal

to 140°F, and

B) from about 0 to about 60 percent by weight (based on the final weight of the hot melt adhesive composition) of one or more tackifiers.

17. (Cancelled)

18. The cellulosic article of Claim 16 wherein in the hot melt adhesive composition;

A) the homogeneous ethylene/ α -olefin interpolymer is present in an amount of from about 65 to about 80 percent by weight (based on the final weight of the hot melt adhesive composition) and the homogeneous ethylene/ α -olefin interpolymer is characterized by having:

- i) a density of from about 0.890 to about 0.920 g/cm³;
- ii) a number average molecular weight (Mn) of from about 1,250 to about 7,000; and
- iii) a Brookfield viscosity (measured at 300°F) of from about 1,000 to about 6,000 cP; and

B) the one or more tackifiers is present in an amount of from about 20 to about 35 percent by weight (based on the final weight of the hot melt adhesive composition); and wherein

C) the hot melt adhesive composition is characterized by:

- i) having a Brookfield Viscosity (measured at 350°F) of from about 500 to about 1,400 cP;
- ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 115°F;
- iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 150°F; and
- iv) exhibiting 100% paper tear at 140°F.

19. The cellulosic article of Claim 16 wherein in the hot melt adhesive composition;

A) the homogeneous ethylene/a-olefin interpolymer is characterized by having:

i) a density of from about 0.893 to about 0.930 g/cm³;

ii) a number average molecular weight (Mn) of from about 1,000 to about

5 6,000; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,500 to about

5,000 cP; and

B) the hot melt adhesive composition is characterized by:

10 i) having a Brookfield Viscosity (measured at 350°F) of from about 400 to about 1,400 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 90°F;

15 iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 200°F.; and

iv) exhibits 100% paper tear at 120°F.

20. The cellulosic article of Claim 16 wherein in the hot melt adhesive composition;

A) the homogeneous ethylene/a-olefin interpolymer is characterized by having:

20 i) a density of from about 0.894 to about 0.910 g/cm³;

ii) a number average molecular weight (Mn) of from about 1100 to about

5,300; and

iii) a Brookfield Viscosity (measured at 300°F) of from about 1,600 to about 3,200 cP; and

25 B) the hot melt adhesive composition is characterized by:

i) having a Brookfield Viscosity (measured at 350°F) of from about 700 to

about 1,200 cP;

ii) having a Peel Adhesion Failure Temperature ("PAFT") of greater than or equal to 90°F;

iii) having a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 200°F.; and

iv) exhibits 100% paper tear at 120°F.

21. The cellulosic article of Claim 16, wherein in the hot melt adhesive composition:

A) the homogeneous ethylene/a-olefin interpolymers is an interpolymers of ethylene and one or more C₃-C₃₀ a-olefins; and

B) the one or more tackifiers is selected from the group consisting of aliphatic hydrocarbon resins, hydrogenated hydrocarbon resins, C₅ aliphatic or aromatic hydrocarbon resins or an aromatically modified C₅ aliphatic or aromatic hydrocarbon resins and combinations thereof.

22. The cellulosic article of Claim 19, wherein in the hot melt adhesive composition:

A) the homogeneous ethylene/a-olefin interpolymers is an interpolymers of ethylene and one or more C₃-C₃₀ a-olefins; and

B) the one or more tackifiers is selected from the group consisting of aliphatic hydrocarbon resins, hydrogenated hydrocarbon resins, C₅ aliphatic or aromatic hydrocarbon resins or an aromatically modified C₅ aliphatic or aromatic hydrocarbon resins and combinations thereof.

23. The cellulosic article of Claim 16 wherein in the hot melt adhesive composition;

A) in the homogeneous ethylene/a-olefin interpolymers, the a-olefin is selected from the group consisting of C₈ (1-Octene); C₁₀ (1-Decene), C₁₂ (1-dodecene), C₁₄ (1-duodecene), C₁₄ (1-tetradecene), C₁₆ (1-hexadecene), C₁₈ (1-octadecene), C₂₀₋₂₄⁺, C₂₄₋₂₈ and C₃₀ and combinations thereof; and

B) the one or more tackifiers is characterized as having an acid number between 0 [[to]] and about 25.8.

24. The cellulosic article of Claim 19 wherein in the hot melt adhesive composition;

A) in the homogeneous ethylene/a-olefin interpolymers, the a-olefin is selected from the group consisting of C₈ (1-Octene); C₁₀ (1-Decene), C₁₂ (1-dodecene), C₁₄ (1-duodecene), C₁₄ (1-tetradecene), C₁₆ (1-hexadecene), C₁₈ (1-octadecene), C₂₀₋₂₄⁺, C₂₄₋₂₈ and C₃₀ and combinations thereof; and

B) the one or more tackifiers is characterized as having an acid number between 0 and about 25.8.

25. The cellulosic article of Claim 16 wherein the hot melt adhesive composition further comprises one or more compounds chosen from the group consisting of stabilizers, plasticizers, fillers, antioxidants, preservatives, synergists, dyes, and pigments.

26. The cellulosic article of Claim 16, wherein the cellulosic article is selected from the group consisting of corrugated cardboard, kraft paper, linerboard, and paper.

27. The cellulosic article of Claim 19, wherein the cellulosic article is selected from the group consisting of corrugated cardboard, kraft paper, linerboard, and paper.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled).

31 A method of producing a polymer composition comprising admixing:

A) an amount of from about 60 to about 85 percent by weight (based on the final weight of

the polymer composition) of a homogeneous ethylene/ α -olefin interpolpolymer, wherein the homogeneous ethylene/ α -olefin interpolpolymer is characterized by having:

- I) a density of from about 0.880 to about 0.930 g/cm³;
- ii) a number average molecular weight (Mn) of from about 1,000 to about 9,000; and
- iii) a Brookfield viscosity (measured at 300°F) of from about 500 to about 7,000 cP;

5

B) an amount of from about 0 to about 60 percent by weight (based on the final weight of the polymer composition) of a tackifier; and wherein

C) the polymer composition is characterized by having:

10

- I) a Brookfield viscosity (measured at 350°F) of from about 400 to about 2,000 cP;
- ii) a Peel Adhesion Failure Temperature (:"PAFT") of greater than or equal to 110°F; and
- iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to 140°F.

15

32. The method as described in Claim 31, wherein:

A) the homogeneous ethylene/ α -olefin interpolpolymer is characterized by having:

- I) a density of from about 0.893 to about 0.930 g/cm³;
- ii) a number average molecular weight (Mn) of from about 1,000 to about 6,000; and
- 20 iii) a Brookfield viscosity (measured at 300°F) of from about 1,500 to about 5,000 cP; and

B) wherein the polymer composition is characterized by having:

- I) a Brookfield viscosity (measured at 350°F) of from about 400 to about 1,400 cP;
- 25 ii) a Peel Adhesion Failure Temperature (:"PAFT") of greater than or equal to 90°F;
- iii) a Shear Adhesion Failure Temperature ("SAFT") of greater than or equal to

200°F; and

iv) exhibits 100% paper tear at 140°F.

10. EVIDENCE APPENDIX (Evidence follows Table of Authorities)

A. U.S. Pat. No. 6,552,110 B1 to Yalvac et al. (Cover page only, to show assignment to Dow Global Technologies, Inc. and Nor-Skilt)

B. "Patent Assignment Abstract of Title" for U.S. Pat. No. 6,552,110 B1

5 C. "Patent Assignment Abstract of Title" for U.S. Pat. App. Ser. No. 10/666,488 (the present pending application, to show HRD as sole assignee)

D. U.S. Pat. No. 6,120,887 to Werenicz et al. (Cover page only, to show assignment to H. B. Fuller Licensing and Financing, Inc.)

E. "Patent Assignment Abstract of Title for U.S. Pat. No. 6,120,887

10

11. RELATED PROCEEDINGS APPENDIX

(NONE)

12. TABLE OF AUTHORITIES

Page

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<u>In re Vogel and Vogel</u> , 164 USPQ2d 619 (C.C.P.A., 1970)	16, 17

EXHIBIT A

This was relied upon by the Examiner in each of the Office Actions. Specifically,

-Office Paper No./Mail Date 0505,

page 2, fourth paragraph (beginning with "Claims 1-15 and 26-30 are rejected ...");

page 3, last paragraph ("The applied reference has a common assignee with the instant application", referring to Examiner's conclusion that Dow is a common assignee of the reference and the present pending application.); and

-Notice of References Cited by Examiner, item D.

-Office Paper No./Mail Date 0206,

page 3, third paragraph (beginning with "Claims 1-15 and 26-30 are rejected ..."); and

page 4, third and fourth paragraphs ("The applied reference has a common assignee with the instant application", referring to Examiner's conclusion that Dow is a common assignee of the reference and the present pending application.).



US006552110B1

(12) **United States Patent**
Yalvac et al.

(10) Patent No.: **US 6,552,110 B1**
(45) Date of Patent: **Apr. 22, 2003**

(54) **THERMOPLASTIC MARKING COMPOSITIONS**

(75) Inventors: Selim Yalvac, Lake Jackson, TX (US);
Teresa Karjala, Lake Jackson, TX (US); Robert A. Dubols, Houston, TX (US); Mark W. Murphy, Schoenberg (CH); Stein Dietrichson, Fredrikstad (NO); Bjorn Nossen, Rade (NO); Ingvild J. B. Stene, Fredrikstad (NO)

(73) Assignees: Dow Global Technologies Inc.,
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/529,626**

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(2), (4) Date: **Jun. 12, 2000**

(87) PCT Pub. No.: **WO99/20701**

PCT Pub. Date: **Apr. 29, 1999**

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(60) Provisional application No. 60/063,129, filed on Oct. 21, 1997, and provisional application No. 60/071,685, filed on Jan. 16, 1998.

(51) Int. Cl.⁷ **C08L 93/04**

(52) U.S. Cl. **524/274; 524/425; 524/270; 524/494; 524/497; 524/413; 528/490; 523/172**

(58) Field of Search **524/413, 425, 524/270, 494, 497; 528/490**

(56) **References Cited**

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* cited by examiner

Primary Examiner—David W. Wu

Assistant Examiner—Rip A Lee

(57)

ABSTRACT

The subject invention pertains to thermoplastic marking compositions comprising a binder, which in turn comprise at least one homogeneous polymer. Accordingly, the subject invention provides a thermoplastic marking composition comprising: (a) from 10 to 80 weight percent of a binder, which in turn comprises: (i) from 1 to 99 weight percent of at least one homogeneous polymer; (ii) from 5 to 70 weight percent of at least one tackifier; (iii) from 0 to 10 weight percent of a polyethylene which has pendant acid functionality moieties of a non-functionalized wax; and (iv) from 0 to 20 weight percent of a plasticizer; and (b) from 20 to 90 weight percent of an inorganic filler. The subject formulations are usefully applied via spray, screed, and extrusion techniques

19 Claims, 1 Drawing Sheet

EXHIBIT B

This was inherently relied upon by the Examiner in each of the Office Actions, in reaching his conclusion that the reference has a common assignee as the present pending application.

Specifically,

- Office Paper No./Mail Date 0505,

 - page 2, fourth paragraph (beginning with "Claims 1-15 and 26-30 are rejected ...");

 - page 3, last paragraph ("The applied reference has a common assignee with the instant application", referring to Examiner's conclusion that Dow is a common assignee of the reference and the present pending application.); and

- Notice of References Cited by Examiner, item D.

- Office Paper No./Mail Date 0206,

 - page 3, third paragraph (beginning with "Claims 1-15 and 26-30 are rejected ..."); and

 - page 4, third and fourth paragraphs (The applied reference has a common assignee with the instant application).



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Patent Assignment Abstract of Title

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Total Assignments: 5

Patent #: 6552110

Issue Dt: 04/22/2003

Application #: 09529626

Filing Dt: 06/12/2000

Inventors: Selim Yalvac, Teresa Karjala, Robert A. Dubois, Mark W. Murphy, Stein Dietrichson et al

Title: THERMOPLASTIC MARKING COMPOSITIONS

Assignment: 1

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Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

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Exec Dt: 10/21/1997

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Exec Dt: 10/21/1997

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Assignment: 2

Reel/Frame: 013920/0986

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Assignment: 3

Reel/Frame: 013921/0011

Recorded: 04/07/2003

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Reel/Frame: 013920/0965

Recorded: 04/07/2003

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Assignment: 5

Reel/Frame: 014166/0416

Recorded: 06/13/2003

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

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Assignee: DOW GLOBAL TECHNOLOGIES INC.

Pages: 5

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Exec Dt: 04/27/1998

Exec Dt: 04/27/1998

Pages: 3

Exec Dt: 05/29/1998

Pages: 3

Exec Dt: 04/25/2003

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EXHIBIT C

This was inherently relied upon by the Examiner in each of the Office Actions, in reaching his conclusion that the reference has a common assignee as the present pending application. This evidentiary item shows HRD is the sole assignee of the present pending application.

Specifically,

- Office Paper No./Mail Date 0505,
 - page 2, fourth paragraph (beginning with "Claims 1-15 and 26-30 are rejected ...");
 - page 3, last paragraph ("The applied reference has a common assignee with the instant application", referring to Examiner's conclusion that Dow is a common assignee of the reference and the present pending application.); and
- Notice of References Cited by Examiner, item D.

- Office Paper No./Mail Date 0206,
 - page 3, third paragraph (beginning with "Claims 1-15 and 26-30 are rejected ..."); and
 - page 4, third and fourth paragraphs (The applied reference has a common assignee with the instant application).



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Patent Assignment Abstract of Title

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Total Assignments: 3

Patent #: NONE

Publication #: US20040236002

Inventors: Aziz Hassan, Gregory Borsinger, Teresa P. Karjala

Title: Novel multifunctional polymer for use in hot melt adhesive applications

Application #: 10666488

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Reel/Frame: 015511/0071

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Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

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Reel/Frame: 015385/0548

Recorded: 06/01/2004

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Pages: 3

Exec Dt: 05/13/2004

Pages: 3

Exec Dt: 02/11/2004

USPTO Assignments on the Web

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Reel/Frame: 015385/0574

Recorded: 06/01/2004

Pages: 3

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EXHIBIT D

This was relied upon by the Examiner in each of the Office Actions. Specifically,

-Office Paper No./Mail Date 0505,

page 2, last paragraph (beginning with "Claims 1-30 are rejected ...");

page 4, first and second paragraphs ("The applied reference has a common assignee with the instant application" referring to Examiner's conclusion that Dow is a common assignee of the reference and the present pending application, although reference is clearly shown to be assigned to H.B. Fuller Licensing & Financing, Inc.); and

-Notice of References Cited by Examiner, item C.

-Office Paper No./Mail Date 0206,

page 3, last paragraph (beginning with "Claims 1-30 are rejected ..."); and

page 4, last two paragraphs (The applied reference has a common assignee with the instant application).



US006120887A

United States Patent [19]

Werenicz et al.

[11] **Patent Number:** **6,120,887**[45] **Date of Patent:** **Sep. 19, 2000**

[54] **DISPOSABLE ARTICLES HAVING A
CONTINUOUS THERMOPLASTIC COATING
COMPRISING A METALLOCENE
POLYOLEFIN**

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[21] **Appl. No.:** 08/705,380

[22] **Filed:** Aug. 29, 1996

Related U.S. Application Data

[63] Continuation-in-part of application No. PCT/EP96/00377,
Jan. 30, 1996, and a continuation-in-part of application No.
PCT/EP95/00665, Feb. 23, 1995, abandoned.

[51] **Int. Cl.⁷** B32B 27/32; A61F 13/15

[52] **U.S. Cl.** 428/219; 428/131; 428/500;
428/515; 428/516; 604/366; 604/370; 604/372;
524/570; 524/579; 156/334

[58] **Field of Search** 604/366, 370,
604/372; 428/500, 515, 131, 219, 516;
524/570, 579; 156/334

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[57] **ABSTRACT**

This invention relates to a non-contact coating method for producing a continuous coating and articles constructed therefrom. This invention further relates to a method for producing a textile material with a moisture-impermeable barrier layer and to a method for producing a moisture-absorbing article of hygiene which has such a barrier layer. This invention particularly relates to a textile material and hygienic disposable articles comprising a body fluid impermeable barrier layer which can be produced from a non-contact coating method. Preferably, the thermoplastic composition used for producing the barrier layer exhibits certain rheological characteristics and comprises at least one homogeneous linear or substantially linear interpolmer of ethylene with at least one C₃–C₂₀ alpha-olefin, further characterized by each said interpolmer having a polydispersity less than about 2.5.

25 Claims, 1 Drawing Sheet

EXHIBIT E

This was inherently relied upon by the Examiner in each of the Office Actions, in reaching his conclusion that the reference has a common assignee as the present pending application.

Specifically,

- Office Paper No./Mail Date 0505,
 - page 2, fourth paragraph (beginning with “Claims 1-15 and 26-30 are rejected ...”);
 - page 3, last paragraph (“The applied reference has a common assignee with the instant application”, referring to Examiner’s conclusion that Dow is a common assignee of the reference and the present pending application, when the reference clearly shows that is assigned to H.B. Fuller Licensing & Financing Inc.); and
- Notice of References Cited by Examiner, item D.

- Office Paper No./Mail Date 0206,
 - page 3, third paragraph (beginning with “Claims 1-15 and 26-30 are rejected ...”); and
 - page 4, third and fourth paragraphs (The applied reference has a common assignee with the instant application).



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Total Assignments: 3**Patent #:** 6120887**Issue Dt:** 09/19/2000**Application #:** 08705380**Filing Dt:** 08/29/1996**Inventors:** HARALD WERENICZ, THOMAS WITTKOPF, GERHARD VOSS, PETER REMMERS, MARK G. KATSAROS et al**Title:** DISPOSABLE ARTICLES HAVING A CONTINUOUS THERMOPLASTIC COATING COMPRISING A METALLOCENE POLYOLEFIN**Assignment: 1****Reel/Frame:** 009623/0537**Recorded:** 12/07/1998**Pages:** 5**Conveyance:** ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).**Assignors:** HOENIG, WENDYYALVAC, SELIMSCHANOBISH, KALYANKARJALA, TERESAPARIKH, DEEPAKKELLEY, DAVID C.**Exec Dt:** 10/06/1998**Exec Dt:** 10/06/1998**Exec Dt:** 10/07/1998**Exec Dt:** 09/29/1998**Exec Dt:** 10/28/1998**Exec Dt:** 10/12/1998**Assignee:** DOW CHEMICAL COMPANY, THE

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Assignment: 2

Pages: 2**Reel/Frame:** 010534/0806**Recorded:** 01/10/2000**Conveyance:** ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).**Assignor:** DOW CHEMICAL COMPANY, THE**Assignee:** H.B. FULLER LICENSING & FINANCING, INC.

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Assignment: 3**Reel/Frame:** 010517/0307**Recorded:** 05/19/1999**Conveyance:** ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).**Assignors:** WERENICZ, HARALDWITTKOPF, THOMASVOSS, GERHARDREMMERS, PETERKATSAROS, MARK C.POLANCE, ROBERT G.KROLL, MARK S.**Assignee:** H.B. FULLER LICENSING & FINANCING, INC.

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Exec Dt: 11/20/1998**Pages:** 9**Exec Dt:** 01/12/1999**Exec Dt:** 01/11/1999**Exec Dt:** 01/11/1999**Exec Dt:** 01/11/1999**Exec Dt:** 12/10/1998**Exec Dt:** 03/29/1999**Exec Dt:** 03/31/1999

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